

CALIBRATION STANDARD SPECIFICATION
FOR A
VARIABLE VOLUME PRESSURE CONTROLLER
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PROCUREMENT PACKAGE

Prepared by: Naval Warfare Assessment Center
Measurement Science Directorate
Code MS-33
Corona, CA 91718-5000

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1. SCOPE

1.1 Scope. This specification defines the mechanical, electrical, and electronic characteristics for a Variable Volume Pressure Controller. This equipment is intended to be used by Navy personnel in shipboard and shorebased laboratories to provide vernier pressure control in an enclosed pressure system for the purpose of calibrating pressure gauges, switches, transducers, transmitters and other pressure measuring devices. For the purposes of this specification, the Variable Volume Pressure Controller shall be referred to as the VVPC.

2. APPLICABLE DOCUMENTS

2.1 Controlling Specifications. MIL-T-28800, "Military Specification, Test Equipment for use with Electrical and Electronic Equipment, General specification for," and all documents referenced therein of the issues in effect on the date of this solicitation shall form a part of this specification.

3. REQUIREMENTS

3.1 General. The VVPC shall conform to the Type II, Class 5, Style E requirements as specified in MIL-T-28800 for Navy shipboard and shorebased use

as modified below. The use of material restricted for Navy use shall be governed by MIL-T-28800.

3.1.1 Design and Construction. The VVPC design and construction shall meet the requirements of MIL-T-28800 for Type II equipment.

3.1.2 Dimensions and Weight. Maximum dimensions shall not exceed 5 inches in width, 5 inches in height, and 10 inches in depth. The VVPC weight shall not exceed 6 pounds.

3.1.3 Lithium Batteries. Per MIL-T-28800, lithium batteries are prohibited without prior authorization. A request for approval for the use of lithium batteries, including those encapsulated in integrated circuits, shall be submitted to the procuring activity at the time of submission of proposals. Approval shall apply only to the specific model proposed.

3.2 Environmental Requirements. The VVPC shall meet the environmental requirements for a Type II, Class 5, Style E equipment with the deviations specified below.

3.2.1 Temperature and Humidity. The VVPC shall meet the conditions below:

	<u>Temperature (°C)</u>	<u>Relative Humidity (%)</u>
Operating	10 to 30	95
	30 to 40	75
Non-operating	-40 to 70	Not Controlled

3.2.2 Electromagnetic Compatibility. The electromagnetic compatibility requirements of MIL-T-28800 are limited to the following areas: CE01, CE03, CS01, CS02, CS06, RE01, RE02 (14 kHz to 1 GHz), and RS03.

3.3 Reliability. Type II reliability requirements are as specified in MIL-T-28800.

3.3.1 Calibration Interval. The VVPC shall have an 85% or greater probability of remaining within tolerances of all specifications at the end of a 12 month period.

3.4 Maintainability. The VVPC shall meet the Type II maintainability requirements as specified in MIL-T-28800 except the lowest discrete component

shall be defined as a replaceable assembly. Certification time shall not exceed 60 minutes.

3.5 Performance Requirements. The VVPC shall provide the following capability as specified below. Unless otherwise indicated, all specifications shall be met following a 30-minute warm-up period.

3.5.1 Pressure Range. The VVPC shall have a minimum pressure range of 0 to 1,000 psi.

3.5.2 Adjustment Sensitivity. The VVPC shall have an adjustment sensitivity of at least ± 0.0005 psi.

3.5.3 Leak Rate. The VVPC shall have a leak rate of less than 1×10^{-5} atm cc/sec.

3.5.4 Total Mechanical Rotation. The VVPC shall have a minimum total mechanical rotation of 33 1/2 turns.

3.5.5 Temperature Range. The VVPC shall have a minimum temperature range of 32°F to 120°F.

3.6 Operating Requirements. The VVPC shall provide the following capabilities.

3.6.1 Pneumatic Pressure Generation. The VVPC shall be able to generate a minimum pneumatic pressure of 35 psia.

3.6.2 Proof Pressure. The VVPC shall have a minimum proof pressure of 2,000 psi.

3.6.3 Construction. The VVPC construction shall meet the following requirements.

3.6.3.1 Aluminum Body. The VVPC shall have an aluminum body.

3.6.3.2 Stainless Steel Screw and Valve Stem. The VVPC shall have a stainless steel screw and valve stem.

3.6.4 Life. The VVPC shall have a minimum life of 250,000 cycles.

3.6.5 Total Volume. The VVPC shall have a total volume of 12.5 cubic inches ± 0.5 cubic inches.

3.7 Manual. At least two copies of an operation and maintenance manual shall be provided. The manual shall meet the requirements of MIL-M-7298.

3.7.1 Calibration Procedure. A calibration procedure in accordance with MIL-M-38793 shall be provided.